

REMARKS

Claim Rejections Under 35 U.S.C. §103

1. In the Office Action, claims 1-3, 9-12, 14 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,562,900 (“Anderson et al.”) in view of U.S. Pat. No. 5,448,994 (“Iinuma”) and further in view of U.S. Pat. No. 6,113,559 (“Klopotek”). This rejection is respectively traversed based on the following remarks.

Anderson et al. disclose a lightweight system for use in a system employing a multiplicity of focused acoustic transducers, column 1, lines 6-8. Each transducer has its own Fresnel lens, column 1, lines 38-39. The Fresnel lenses 12 are used to focus the energy from all of the acoustic transducers 14 toward a single focal point or target, see Fig. 2 and column 2, lines 3-4.

Iinuma discloses a system including a concave transducer element divided into a plurality of partial transducers a1-a12 and b1-b8, see Fig. 7, and a driving control means for driving/controlling the plurality of partial transducers to selectively generate high-energy ultrasonic waves for medical treatment and ultrasonic waves for non-treatment, see column 3, lines 31-35 and column 5, lines 46-48. The plurality of partial transducers are arranged to form a single focal point, see Figs. 8 and 11, and column 2, lines 33-35. Iinuma discloses a stone disintegration apparatus wherein the concave transducer 10 is driven by a pulser 22 to emit a strong ultrasonic pulse (shock wave) or a weak ultrasonic pulse, see column 5, lines 46-48. The pulsers 22, constituting the driving system 20, drive the respective partial transducers (a1-b8). The controller 64 supplies signals for controlling outputs from the pulsers 22, thereby controlling the output pulses from the transducer 10, wherein the output pulses are a strong output pulse, an intermediate output pulse and a weak output pulse, see column 6, lines 21-37. Iinuma further discloses a hyperthermia apparatus wherein the pulsers 22, constituting the driving system in the stone disintegration apparatus, are replaced by continuous wave generation drivers 24. The hyperthermia apparatus is designed to radiate a continuous wave or a burst wave, see column 10, lines 62-68.

Klopotek discloses a transducer 22 that has a concave or cylindrical surface 40 that extends along a linear dimension 42. Klopotek further discloses that a number of elongated transducer elements 44 that extend longitudinally along linear dimension 42 may be disposed

along surface 40 of transducer 22. Since elements 44 are disposed along the concave surface 40, elements 44 will transmit the ultrasound beams that they each respectively generate towards a single longitudinal focal point 48 extending longitudinally along dimension 42 and lying at the intersection of the various radii 50 that extend from the elongated transducer elements 44 to focal point 48 (see col. 4, lines 3-20 and Fig. 2). Klopotek states “that a single curved transducer or multiple transducer elements could be used in transducer 22,” (see col. 4, lines 8-10), thus a single curved transducer could be used instead of multiple transducer elements to transmit ultrasound beams to a single longitudinal focal point 48. Klopotek also discloses that transducer 22 may be moved or scanned along a direction defined by double-headed arrow 45 in Figs. 7, 8 and 9 (see col. 6, lines 63-65 and Figs. 7, 8 and 9). Klopotek further discloses that while transducer 22 is being moved along the direction of arrow 45, it is delivering an ultrasound beam focused at a single focal point 48 (see col. 6, lines 65-67). If the ultrasound energy is delivered discretely in both dimensions 42 and 45, then a pattern of ultrasound energy application such as illustrated in Fig. 8 results where each point 47 represents a location where ultrasound has been applied (see col. 7, lines 16-20). If the ultrasound energy is delivered discretely in dimension 45 and continuously in dimension 42, then a pattern of ultrasound energy application such as illustrated in Fig. 9 results where regions 49 represent regions where ultrasound has been applied (see col. 7, lines 24-28).

Anderson et al., Iinuma and Klopotek all teach the focusing of a plurality of transducer elements to a single focal point. In the case of Klopotek, the single focal point has a linear dimension corresponding to the linear dimension of the elongated transducer elements. Anderson et al., Iinuma and Klopotek together fail to teach that each transducer element is focused to individually separate and distinct focal points. A §103 rejection based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference is not proper and the prima facie case of obviousness cannot be properly made. In short there would be no motivation for engaging in the modification or change.

Together Anderson et al., Iinuma and Klopotek do not provide any motivation, suggestion or teachings for having “...an ultrasound emitting member having a plurality of individual ultrasound emitting elements spaced from one another, the ultrasound emitting elements being actuatable to emit ultrasound energy a predetermined distance outwardly from an active surface whereby the ultrasound energy is focused within tissue of the patient at separate and distinct

locations for each individual ultrasound emitting element to form a lesion...” as required in claims 1-8. Therefore, the rejection of claims 1-3 as being unpatentable over Anderson et al. in view of Iinuma and further in view of Klopotek should be withdrawn.

In addition, Anderson et al., Iinuma and Klopotek do not provide any motivation, suggestion or teachings for having an “...ultrasound emitting member comprising an active face adapted for positioning adjacent an area of tissue, the active face carrying one or more rows of spaced apart ultrasound transducer elements, the ultrasound transducer elements selectively, independently actuatable to emit focused ultrasound energy focused a predetermined distance from the active face and focused at separate and distinct locations for each individual ultrasound transducer element...” as now required in claims 9-20. Therefore, the rejection of claims 9-12, 14 and 15 as being unpatentable over Anderson et al. in view of Iinuma and further in view of Klopotek should be withdrawn.

2. In the Office Action, claims 4, 6-8, 13, 16 and 18-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,562,900 (“Anderson et al.”) in view of U.S. Pat. No. 5,448,994 (“Iinuma”) and further in view of U.S. Pat. No. 6,113,559 (“Klopotek”) as applied to claims 1 and 9 above, and further in view of U.S. Pat. No. 5,413,550 (“Castel”). This rejection is respectively traversed based on the following remarks.

Like Anderson et al., Iinuma and Klopotek, Castel also does not provide any motivation, suggestion or teachings for having “...an ultrasound emitting member having a plurality of individual ultrasound emitting elements spaced from one another, the ultrasound emitting elements being actuatable to emit ultrasound energy a predetermined distance outwardly from an active surface whereby the ultrasound energy is focused within tissue of the patient at separate and distinct locations for each individual ultrasound emitting element to form a lesion...” as required in claims 1-8. Therefore, the rejection of claims 4 and 6-8 as being unpatentable over Anderson et al. in view of Iinuma, further in view of Klopotek and further in view of Castel should be withdrawn.

In addition, Castel also does not provide any motivation, suggestion or teachings for having an “...ultrasound emitting member comprising an active face adapted for positioning adjacent an area of tissue, the active face carrying one or more rows of spaced apart ultrasound

transducer elements, the ultrasound transducer elements selectively, independently actuatable to emit focused ultrasound energy focused a predetermined distance from the active face and focused at separate and distinct locations for each individual ultrasound transducer element...” as required in claims 9-20. Therefore, the rejection of claims 13, 16 and 18-20 as being unpatentable over Anderson et al. in view of Iinuma, further in view of Klopotek, and further in view of Castel should be withdrawn.

3. In the Office Action, claims 5 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,562,900 (“Anderson et al.”) in view of U.S. Pat. No. 5,448,994 (“Iinuma”) and further in view of U.S. Pat. No. 6,113,559 (“Klopotek”) as applied to claims 1 and 9 above, and further in view of U.S. Pat. No. 6,626,855 (“Weng et al.”). This rejection is respectively traversed based on the following remarks.

Like Anderson et al., Iinuma and Klopotek, Weng also does not provide any motivation, suggestion or teachings for having “...an ultrasound emitting member having a plurality of individual ultrasound emitting elements spaced from one another, the ultrasound emitting elements being actuatable to emit ultrasound energy a predetermined distance outwardly from an active surface whereby the ultrasound energy is focused within tissue of the patient at separate and distinct locations for each individual ultrasound emitting element to form a lesion...” as required in claims 1-8. Therefore, the rejection of claim 5 as being unpatentable over Anderson et al. in view of Iinuma, further in view of Klopotek, and further in view of Weng should be withdrawn.

In addition, Weng also does not provide any motivation, suggestion or teachings for having an “...ultrasound emitting member comprising an active face adapted for positioning adjacent an area of tissue, the active face carrying one or more rows of spaced apart ultrasound transducer elements, the ultrasound transducer elements selectively, independently actuatable to emit focused ultrasound energy focused a predetermined distance from the active face and focused at separate and distinct locations for each individual ultrasound transducer element...” as required in claims 9-20. Therefore, the rejection of claim 17 as being unpatentable over Anderson et al. in view of Iinuma, further in view of Klopotek, and further in view of Weng should be withdrawn.

4. In the Office Action, claims 21-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,562,900 (“Anderson et al.”) in view of U.S. Pat. No. 5,413,550 (“Castel”) and further in view of U.S. Pat. No. 6,113,559 (“Klopotek”). This rejection is respectively traversed based on the following remarks.

Anderson et al., Castel and Klopotek do not provide any motivation, suggestion or teachings for “...focusing the ultrasound energy with the selected one or more of the ultrasound emitting elements so that the ultrasound energy is focused a predetermined distance from the active face and focused at separate and distinct locations for each individual ultrasound emitting element...” as required in claims 21-27. Therefore, the rejection of claims 21-27 as being unpatentable over Anderson et al. in view of Castel and further in view of Klopotek should be withdrawn.

Support for this amendment is clearly found in the application as originally filed. No new matter is presented.

Claims 1-27 remain pending in the application and are believed to be in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.


A petition to extend the time for response to the Final Office Action dated March 11, 2005 for three (3) months from June 11, 2005 to September 11, 2005 and an RCE accompany this amendment. Please charge the appropriate extension fee and RCE fee to Deposit Account No. 13-2546.

A supplemental information disclosure statement accompanies this amendment. Please charge the appropriate fee to Deposit Account No. 13-2546.

If the Examiner comes to believe that a telephone conversation may be useful in addressing any remaining open issues in this case, the Examiner is urged to contact the undersigned agent at 763-391-9867.

Please charge any additional required fees or credit any overpayment to Deposit Account
No. 13-2546.

Date September 2, 2005

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